

# Section 3

## County of Kaua'i

### Source Reduction Issue Paper

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## 3.1 Purpose

The purpose of this paper is to characterize the County's current source reduction efforts and provide recommendations to improve source reduction and increase waste diversion in the County.

## 3.2 Background

In Kaua'i's County Code, Chapter 21, Integrated Solid Waste Management, source reduction is defined as "the design, manufacture and use of materials to:

1. Minimize the quantity or toxicity, or both, of the waste produced; and
2. Reduce the creation of waste either by redesigning products or by otherwise changing societal patterns of consumption, use, or waste generation."

### 3.2.1 Legislative

Per the Hawai'i Revised Statutes, Chapter 342G, Integrated Solid Waste Management (HRS 342G-2), each county shall consider the following solid waste management practices and processing methods in their order of priority:

1. Source reduction;
2. Recycling and bioconversion, including composting; and
3. Landfilling and incineration.

Per the State DOH's Report to the Twenty-Third Legislature in December of 2005, source reduction:

"is also called "waste prevention" meaning creating less waste. "Reuse", although not included in the list of priorities, means using a product over without first having to reprocess it. The product may be used for its original or intended use, or may be used in a different capacity."

Waste reduction is difficult to quantify because it avoids creation of waste in the first place. This chapter of Kaua'i's ISWMP will identify and evaluate specific measures for achieving source reduction, as outlined in HRS 342G-26, including:

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- Increased efficiency in the use of all materials;
- Replacement of disposable materials and products with reusable materials and products; and
- Reduced packaging.

### 3.2.2 County of Kaua'i's 1994 Integrated Solid Waste Management Plan

In 1994 the County prepared an integrated solid waste management plan. Table 3-1 lists the “action items” and recommendations pertaining to source reduction and describes what, if any, actions have been taken by the County.

**Table 3-1**  
**County of Kaua'i**  
**1994 ISWMP Action Items and County's Efforts**

Action Item	County Action
Institute Full-Cost Accounting and User Pay System (eliminate reliance on General Fund to finance waste mgmt programs & operations)	The Solid Waste programs continue to be funded by the General Fund. Residents pay for solid waste services via property taxes.
Make costs of waste management explicit (separate line item for solid waste on utility bill)	The County bills residents for solid waste services on their property tax bill, not on the utility bill.
Improve public acceptance of new costs	Because a user pay system was not implemented, this action item is not relevant.
Implement program to reduce illegal dumping	This action item was written to address illegal dumping that may have resulted from a rate increase and a user pay system.
Implement variable collection rates for residents	The County does not have a variable rate program for residential solid waste collection service. Residents are allowed to set out unlimited amounts of refuse and are not charged a direct fee.
Implement County in-house source reduction	The County does not have an official in-house source reduction program, however, County agencies have an increased awareness of waste diversion issues through ongoing participation in the County's office paper recycling program.
Implement resource exchange program	The County oversees the Aloha Shares Network, however there has been little activity by Kaua'i businesses and non-profits. The Kaua'i Resource Center facility was originally designed as a reuse facility. Multiple attempts to solicit a private operator to run a reuse program at that location have failed.
Implement home composting program	Since October 2001, the County has distributed approximately 1,200 home composting bins to County residents, schools, and community organizations.
Implement source reduction education	The County promotes source reduction and reuse by publishing reuse ideas in the Kaua'i Recycling Guide, through public outreach events, and the County website.

### 3.2.3 Current Source Reduction Activities

Source reduction activities are often difficult to track because they sometimes go unnoticed. Reducing waste is not as visible an activity compared to recycling. Reusing items is considered a source reduction activity because it stops waste at the source and it delays or avoids that item's entry in the waste collection and disposal system. Efforts are being made in Kaua'i by various businesses, residents, and by the County to reduce waste at the source, as characterized below.

### 3.2.3.1 In-House Efforts

There is not a coordinated effort of in-house source reduction at the County. However, County agencies have an increased awareness of waste diversion issues through ongoing participation in the County's office paper recycling program. Source reduction practices in County agencies include the following:

- Printing draft documents on the back sides of printed paper;
- Using the back sides of printed paper for scratch paper;
- Reviewing documents electronically prior to printing;
- Issuing memos electronically;
- Issuing electronic press releases to all County employees and media outlets;
- Providing electronic data, information, and reports on County website;
- Reusing manila envelopes for sending in-house documents (envelopes are used dozens of times before they are recycled); and,
- Grasscycling (leaving grass clippings on the lawn to decompose on site) by the County Grounds Maintenance Department.

### 3.2.3.2 Residential and Commercial Efforts

Many businesses in the County are involved in source reduction activities by providing opportunities for residents to reuse items rather than buying new products. These companies are listed below.

- Thrift Stores not only provide an opportunity for residents to donate items such as clothing and household goods, but also provide opportunities for those who need to buy these items at minimal costs. There are currently five thrift stores located in the County:
  - Salvation Army Thrift Stores in Lihue and Hanapepe.
  - Kaua'i Humane Society Thrift Store in Lihue
  - Wilcox Hospital Auxiliary in Lihue
  - Habitat for Humanity Thrift Store in Hanapepe
- Habitat for Humanity. This non-profit organization accepts and reuses building supplies for low income housing construction projects. They resell building supplies and other household goods at their thrift store in Hanapepe.

- Trade Radio. This daily radio show on KONG AM 570 provides an opportunity for callers to buy, sell, or trade reusable items.
- Kaua'i Food Bank. This local non-profit organization partners with many businesses, grocery stores, schools, and farmers. One of their missions is to eliminate the waste of edible foods. Each month, the Kaua'i Food Bank distributes over 100,000 pounds of food and feeds almost 6,000 individuals in need.
- Foam Peanut Reuse. The County Recycling Office has a drop and swap exchange for foam shipping peanuts and bubble wrap in the lobby of the Kaua'i Resource Center. This program allows residents with a place to drop their shipping peanuts, and other residents or small businesses can pick up the materials at no charge. The County does not keep track of users or quantities, but there is an active exchange of material on a daily basis.
- Aloha Shares Network. This statewide program was developed by Maui Recycling Group. Aloha Shares is an electronic reuse network that accepts listings of surplus materials from businesses and residents and matches those donations with the "wish lists" of non-profits, churches, and schools throughout Hawai'i in an effort to divert usable material from being landfilled. In August 2005, the County received Council approval to accept ownership of the Kaua'i Aloha Shares Network. Currently there is very little activity on the network in Kaua'i, but the County is hoping to solicit more donations in the future.

### Education

The County encourages source reduction and reuse in many ways, including publishing information in the Kaua'i Recycling Guide, fielding calls to the Recycling Office, having a booth and talking with residents at various community events, speaking to school children, and posting information on its website.

### Home Composting

The County offers free composting bins to residents in an effort to divert compostable food and yard waste from the Landfill. Since October 2001, the County has distributed approximately 1,200 Earth Machine brand home composting bins to County residents. In order to receive a free bin, residents must agree to participate in an annual composting survey, and they must view a 20-minute composting training video. Based on the results of the most recent annual survey of compost bin recipients conducted by the County, an average of 17.32 gallons of material is diverted each month, equaling 207.84 gallons per composting bin per year. With an average weight of 7.5 pounds per gallon, the compost bin recipients are diverting approximately 1,559 pounds per composting bin per year. Assuming that 1,000 of the bins are in current use, the Home Composting program is diverting almost 780 tons of waste per year.

### Waste Assessments

The County's Recycling Coordinator assists businesses with recycling, waste reduction, and waste diversion issues and conducts waste assessments upon request. The waste assessments include a site visit to understand current waste management

and recycling practices. Recommendations are made for improving recycling and reducing waste generated.

### 3.3 Recommendations for Improvement

The County has increased its source reduction efforts since the last solid waste management plan. However, expanding this component of the waste diversion hierarchy may require a substantial time requirement from County staff. Therefore, R. W. Beck recommends that the County hire an additional recycling staff person in an effort to implement recommendations made in this and other sections of the plan.

#### 3.3.1 In-House Efforts

The County has the opportunity to set an example for reducing waste at the source by implementing source reduction policies and directives in-house. Similar to waste assessments for businesses, the County's Recycling Coordinator should conduct site visits at all County offices and buildings to not only improve recycling efforts, but also look for opportunities to increase source reduction.

County employees could be provided with source reduction information via internal memos, newsletters, and e-mails. Waste-reducing ideas such as those listed in Section 3.2.3.1 should be conveyed in writing to employees. The Recycling Office staff should be accessible to employees who have questions, in an attempt to remove any barriers that may preclude them from practicing waste reduction.

#### 3.3.2 Residential

##### 3.3.2.1 Variable Rate Refuse Collection

Getting people to think about source reduction and reuse is more difficult than say, getting them to recycle. Source reduction is a behavioral change and may require an incentive for a person to make changes in their daily habits. One potential incentive is variable rate or Pay-As-You-Throw (PAYT) refuse collection. As discussed in Section 4 of this plan, PAYT programs create a financial incentive for residents to reduce the amount of refuse they set out each week. This may lead residents to develop habits such as buying products in recyclable packaging or buying products in bulk to reduce or eliminate packaging.

##### 3.3.2.2 On-line Materials Exchange

Another recommendation to increase source reduction is for the County to encourage residents to use a materials exchange, such as the Aloha Shares Network. Currently, this on-line exchange network posts donations from individuals, businesses, organizations and government agencies. Recipients must be non-profit organizations, churches, or schools.

Other materials exchange programs match people who are looking for certain reusable items with people who are looking to discard items. One example is Freecycle at [www.freecycle.org](http://www.freecycle.org), a website that is similar to the now defunct HIMEX – Hawai‘i Materials Exchange. It appears that a Freecycle group has been started in Kaua‘i and has 57 members, although at the time of this writing, the site doesn’t appear to have had recent activity. Another example is [www.craigslist.org](http://www.craigslist.org), an on-line community in which people can publish classified ads at no charge. These and other on-line programs are successful at diverting material from landfills, by providing a free option to traditional advertising and allowing people to list items for sale or give away.

### 3.3.3 Commercial

#### 3.3.3.1 Technical Assistance and Waste Assessments

The County currently offers technical assistance in the form of waste assessments to businesses. R. W. Beck recommends the County promote this service through public education and advertising and continue to assist commercial entities reduce their waste and seek out options to prevent waste from being created in the first place. Because businesses are usually billed for solid waste collection service based on volume, there is already an incentive to reduce the amount of refuse created.

#### 3.3.3.2 Aloha Shares Network/Business Materials Exchange

We recommend the County promote the Aloha Shares Network and solicit donations.

#### 3.3.3.3 Reusable Packaging Containers

Because of the County’s geography, most retail goods are transported in corrugated cardboard. Reusable packaging containers (including plastic pallets) can help businesses reduce their long-term costs while preventing unnecessary waste by<sup>1</sup>:

- Reduced packaging costs. While the purchase price of reusable shipping containers is generally higher than that of single-use containers, over time, the cost per reusable container per trip is lowered, making reusable containers cheaper to use than single-use packaging.
- Reduced damage. Reusable containers are usually sturdier than one-way containers because they are designed to withstand multiple uses. Switching to reusable containers can result in lower rates of damage to goods and materials shipped.
- Reduced labor costs. Freeing workers from the task of breaking down corrugated containers and removing them from assembly-line operations can offer savings, because taking reusable containers off the line can be a much simpler process.

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<sup>1</sup> Source: INFORM, Inc., an independent research organization that examines the effects of business practices on the environment and on human health. <http://www.informinc.org/about.php>

- Avoided disposal costs. Eliminating one-way containers eliminates the need to landfill or recycle them.

The County Recycling Coordinator could provide information on reusable shipping containers and other waste reducing options to businesses through waste assessments and public speaking engagements to the Chamber of Commerce and other business organizations.

A list of references for reusable shipping container information is provided at the end of this section.

#### 3.3.3.4 Lodging Industry Source Reduction

Because the County is a major tourist destination, hotels, motels, and condominium rentals are a large contributor to the waste stream. There are many things the lodging industry can do to reduce the amount of waste generated at hotels, motels, and condos. Some examples include:

- Replace disposable napkins and utensils with reusables (serving ware, napkins, cleaning rags, etc.);
- Buy in bulk when feasible (food and beverages, condiments, cleaning products, etc.);
- Offer newspapers only to guests who request them, rather than delivering them to all rooms;
- Reduce the use of laundry products and packaging by washing linens upon request instead of automatically (this also saves water and energy);
- Install soap and shampoo dispensers in restrooms instead of using disposable amenities;
- Install air hand dryers in public restrooms to reduce the use of disposable paper towels;
- Change lighting from incandescent bulbs to longer lasting fluorescent bulbs; and
- Practice grasscycling on the property grounds.

In 2005, the County partnered with the Kaua'i Chamber of Commerce to offer the Mayor's Ho'ola Hou Award for Achievement in Commercial Recycling. The Kaua'i Marriot Resort and Beach Club in Lihue received an award for their exemplary and innovative recycling program. Their waste reduction and recycling efforts are described in detail in Section 4 of this plan, but some of their more creative source reduction efforts include:

- Installation of an ozone system in the laundry that disinfects and cleans with less detergent and no bleach, requiring less rinsing for an approximate savings of two gallons of water per pound of laundry;
- Donating used mattresses to the Salvation Army and blankets to the various assistance facilities and shelters; and



- Implementing clean air initiatives. The hotel phased out its use of chlorofluorocarbons and hydrochlorofluorocarbons (CFC and HCFC) refrigerants in early 2004.

### 3.3.4 Education

The County should consider expanding its current public education efforts regarding source reduction including, but not limited to:

- Create a page on the County's website dedicated to source reduction and reuse ideas. The page could provide tips to residents and businesses on ways to reduce the amount of waste they create. Examples of source reduction resources include:
  - U.S. EPA's "Consumer Handbook for Reducing Solid Waste":  
<http://www.epa.gov/epaoswer/non-hw/reduce/catbook/the12.htm>
  - City and County of Honolulu's Waste Prevention website:  
[http://envhonolulu.org/solid\\_waste/Waste\\_Prevention.html](http://envhonolulu.org/solid_waste/Waste_Prevention.html)
  - State of Hawai'i Department of Health's "Minimizing Construction and Demolition Waste" guide:  
<http://www.hawaii.gov/health/environmental/waste/sw/pdf/constdem2.pdf>
  - Minnesota Solid Waste Management Coordinating Board's Green Guardian website:  
<http://www.greenguardian.com/buy.asp>
  - Minnesota Pollution Control Agency's website:  
<http://www.reduce.org/>
  - California Integrated Waste Management Board website:  
<http://www.ciwmb.ca.gov/WPW/>
- Continue to provide free home composting bins to County residents in an effort to promote and increase backyard composting of food and yard waste.
- Consider promoting source reduction through an advertising campaign using billboards, television and/or newspaper advertisements, public service announcements, local television shows such as Russell the Rooster, etc.

As stated earlier, source reduction is a behavioral change. Educational material may not be enough to convince people to reduce the amount of waste they generate. Many times an incentive is required for a person to make changes in their daily life.

Dr. Doug McKenzie-Mohr in his book "Fostering Sustainable Behavior"<sup>2</sup> notes that promoting environmental values through extensive education, such as brochures, workshops, and pamphlets or identifying economic savings may change *attitudes* towards an environmental issue without markedly changing people's *behavior*. Cultural, social, emotional, and technological barriers must be identified and overcome in order to make change occur. The means by which this is done is referred to as community-based social marketing and involves four steps:

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<sup>2</sup> For a more detailed discussion of this material, the entire book can be found online at [www.cbsm.com](http://www.cbsm.com)

1. Identifying barriers to sustainable behavior;
2. Designing a strategy that utilizes behavior change tools;
3. Piloting the strategy with a small segment of the community; and
4. Evaluating the program once it has been implemented across the community.

The County may want to consider testing a source reduction educational method for a particular business sector, such as hotels, or test a particular residential community. Behavioral changes could be documented through surveys and then actual amounts of waste generated could be monitored over time to determine the success of the educational effort.

### 3.4 References

Environmental Preferable Purchasing:

<http://www.epa.gov/epp/>

<http://www.p2.org/workgroup/epp/WhatISEPP.cfm>

Reusable transportation containers:

[http://www.informinc.org/xsum\\_deliver.php](http://www.informinc.org/xsum_deliver.php)

<http://www.deq.state.or.us/wmc/packaging/bp/index.htm>

<http://www.deq.state.or.us/wmc/packaging/bp/bpplasticpallets.pdf>

<http://www.moea.state.mn.us/transport/>

Lodging Industry Source Reduction:

<http://www.greenhotels.com/>

[http://www.greenbiz.com/toolbox/reports\\_third.cfm?LinkAdvID=6378](http://www.greenbiz.com/toolbox/reports_third.cfm?LinkAdvID=6378)

### 3.5 Summary

Source reduction is an important component to the County's waste diversion programs, even though its successes are difficult to measure. The results of source reduction take time to be fully recognized. By implementing the recommendations provided in this section, the County may reduce the amount of materials sent to the Landfill for disposal. Source reduction efforts need to be continually monitored to realize the potential effects they have on the waste stream.